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ABSTRACT

This paper discusses two methods used for investigating how students can acquire greater skill in reading for learning. The first study, carried out at Loughborough College of Education, involved students in a pre-packaged sequence of learning experiences. The content of the packages or modules and the sequence in which they were offered embodied the Research Worker's theory about "the best method of reading." Although the study is not yet complete, the results so far indicate that each of the modules produced a change in strategy and specific performance, and that the learning outcomes from reading have already improved considerably. In the second study, students of Gipsy Hill College of Education were offered techniques for researching into their own reading and experimenting with alternative methods and purposes. Being more permissively organized, the Gipsy Hill course seems to have produced less improvement along the dimensions which were used in the pre- and post-testing. However, significant changes took place in both main point and factual reading performance, and all the subjects improved their grades in their education course. Tables of results for both studies are included. (LL)

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CAN STUDENTS LEARN TO LEARN FOR READING?

A Paper read to the Annual Conference
of the British Psychological Society

-by-

L.F. THOMAS, E. SHEILA AUGSTEIN and N.C. FARNES

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CS003 241

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APRIL 1972

1. INTRODUCTION

The Aim was to develop methods by which students could achieve greater self-organisation in their use of reading as a learning skill. Self-organisation would involve each student in achieving:-

a) a clearer understanding and a greater differentiation of their purposes for reading;

b) greater awareness of the ways in which they read and how their strategies and tactics relate to their purposes;

and c) a greater objectivity in assessing the outcomes of their reading activities and relating these to their purposes and their methods of reading.

It was accepted that in becoming more self-aware students might begin to question their reasons for studying; but given a commitment to their course, greater versatility in reading would allow them to achieve better academic performance as assessed by staff. Where students did not choose to accept the purposes of the course on which they had embarked, greater self-organisation would eventually display itself in an active search for alternatives.

There is a Conflict between the aims of this research and the methods which normally would be thought applicable. The orthodox way of setting about such a study would be to expose each student (subject) to the same series of experiences in the expectation that the same experience would lead to the same outcome. Similar outcomes could then be combined to demonstrate "results." Such results would be expressed as the average for the experimental group who would be contrasted with a control group that had not been offered the same experiences. The statistical and "objective" advantages that accrue from this classic design depend upon a strict control of what each subject does. Such a control is in direct conflict with the aim of offering opportunities for increased self-organisation. Greater self-organisation can only be learned by exercising choice; and the exercise of choice within an experiment disperses the neat grouping of results, thus increasing the apparent subjectivity of the process. This study is an attempt to contrast these two approaches and discuss the possibilities of a more adequate paradigm for research.

Two methods were used for investigating how students can acquire greater skill in reading for learning.

The first study (which was carried out at Loughborough College of Education) involved students in a pre-packaged sequence of learning experiences. The content of the packages and the sequence in which the packages were offered embodied the Research Worker's theory about "the best method of reading."

The second study (which was carried out at Gipsy Hill College of Education) involved a more discursive approach in which students were offered techniques for researching into their own reading and experimenting with alternative methods and purposes. Because students were prepared to choose how they set about investigating their own reading, the evidence was more dispersed. But in the judgment of the experimenters the course more nearly achieved the purposes of their investigations.

2. LOUGHBOROUGH STUDY *

The aim of this study derived from Sheila Augstein's previous investigations into how students read for learning[1]. The optimum approach to reading was seen as a flexible self-organisation of a series of sub-skills, each of which was embodied in a training module. It was expected that the total sequence of modules would change the student's skills in reading, and that this in turn would produce a beneficial influence on his academic performance.

Procedure

No detailed attempt is made here to describe the methods used in the training modules. In outline they involve the use of a Reading Recorder[2] which enables the subject to see exactly how he has spent his time in reading a text. By becoming aware of how he hesitates, backtracks and skips forward whilst reading, he is forced to think about what he is doing in much more detail.

A Flow Diagram technique for describing the subjective meaning structure of a text was also used[3].

Various 'before' and 'after' measures were used to study the effects of training (see results). A control group of students matched on initial performance was used to highlight the effects on the experimental group.

LIST OF TRAINING MODULES

Module 1 - Reading in order to respond to objective tests (multiple choice) demanding recognition of small meaning units.

Module 2 - Reading in order to respond to objective tests demanding recall of small meaning units in a form close to the original.

Module 3 - Reading in order to recognise selected facts and terms in a text containing numerous specific items.

Module 4 - Reading to select facts and terms in a text containing numerous specifics and subsequently recall and selectively organise this information.

Module 5 - Reading in order to recognise the main themes in a text.

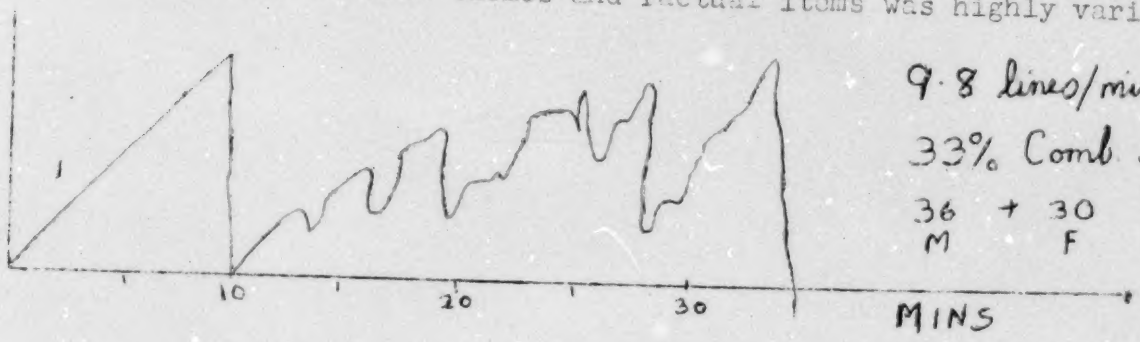
* We are grateful to the Principal, Staff and Students of Loughborough College of Education and in particular to Mr. Duncan Case for the support and cooperation they have offered us throughout this study.

The Results of this study can be summarised as follows:-

a) Reading Strategies before the Course.

Both the strategies of reading and performance as measured by memory of main themes and factual items was highly variable.

5.1



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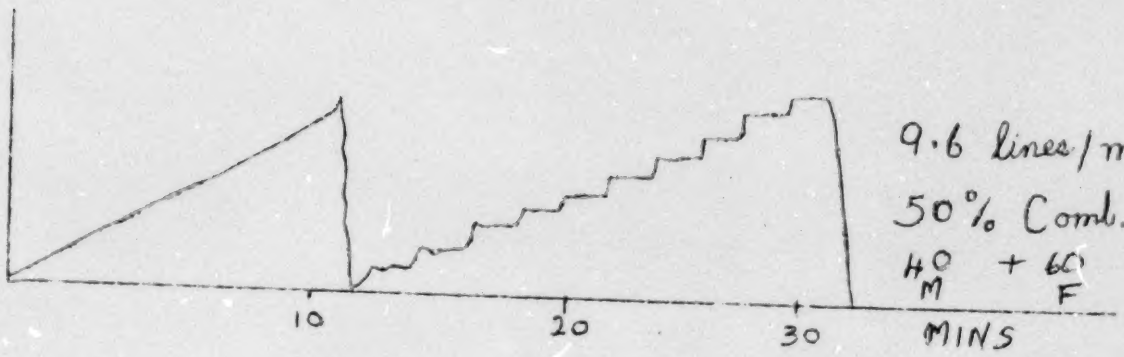

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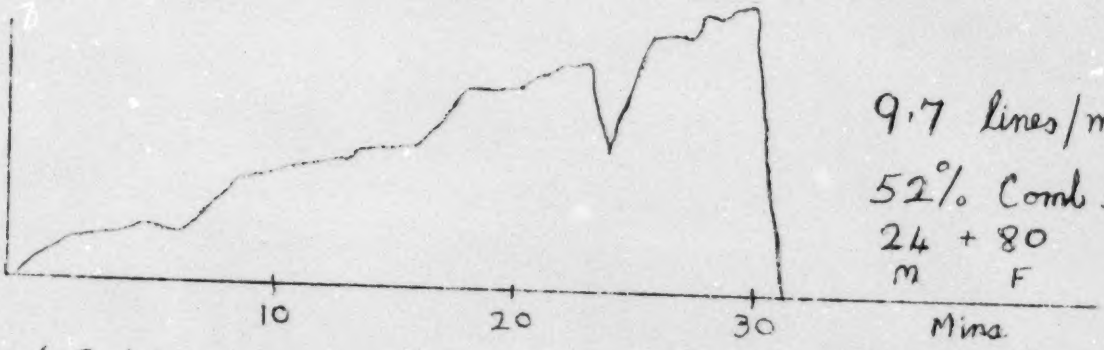

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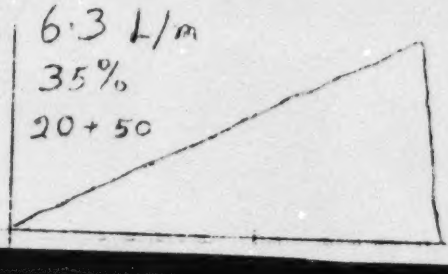

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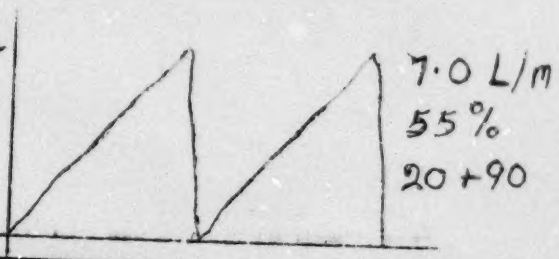


CHANGE ON EACH TRAINING MODULE (PRE- and POST- TEST)

MODULE 1

Subject	PRE- Lines/Min.	PRE- Performance	POST- Lines/Min.	POST- Performance
1	9	90%	29	60
2	4.2	100	16	100
3	6.2	70	34	80
4	9	80	21	80
5	9	80	20	80
6	7	90	22	80
7	7	100	30	100
8	13.5	80	29	80
9	9	90	24	80

MODULE 2

1	30	30	19	80
2	12.5	80	14	80
3	30	90	30	80
4	20	80	11	80
5	20	80	16.5	80
6	10.5	80	12	80
7	25	80	20	80
8	35	50	12.5	70
9	22	70	9.5	80

MODULE 3

Subject	Lines/Min.	Facts	Terms	Lines/Min.	Facts	Terms
1	15	60	100	13		80
2	10	30	85	7	80	100
3	16	55	100	11.5	100	100
4	*					
5	*					
6	7	75	80	9.2	100	100
7	*					
8	*					
9	*					

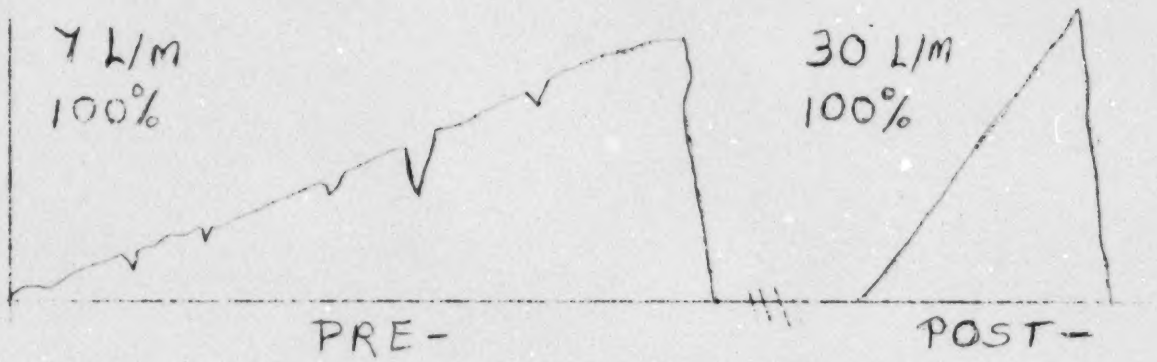
(* Power Strike)

MODULE 4/5

	Lines/Min.	Performance	Lines/Min.	Performance
1	2	57	2.8	100
2	1.7	71	1.0	75
3	3.5	57	5.7	71
4	2.7	57	5.7	86
5	-	71	-	71
6	1.7	57	2.9	71
7	5	30	5.7	71
8	2.5	43	1.4	75
9	2.6	57	5.3	100

CHANGES IN READING STRATEGY FOR EACH MODULE

M.1



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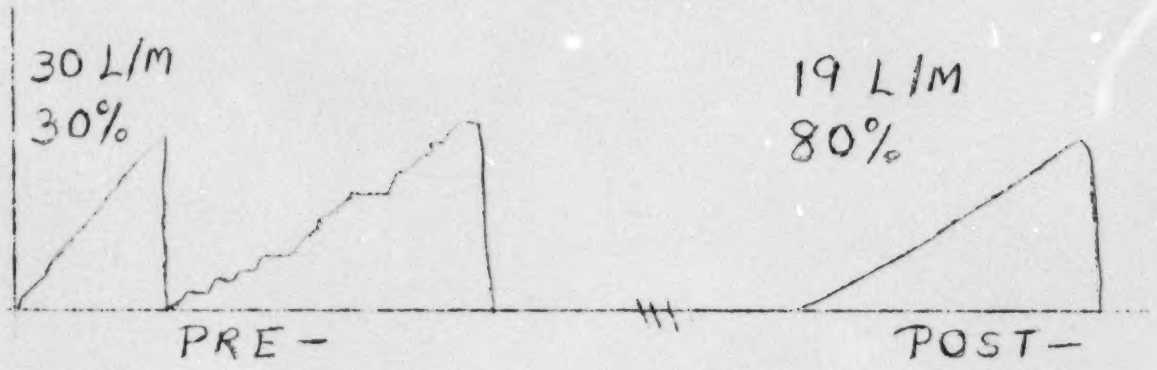

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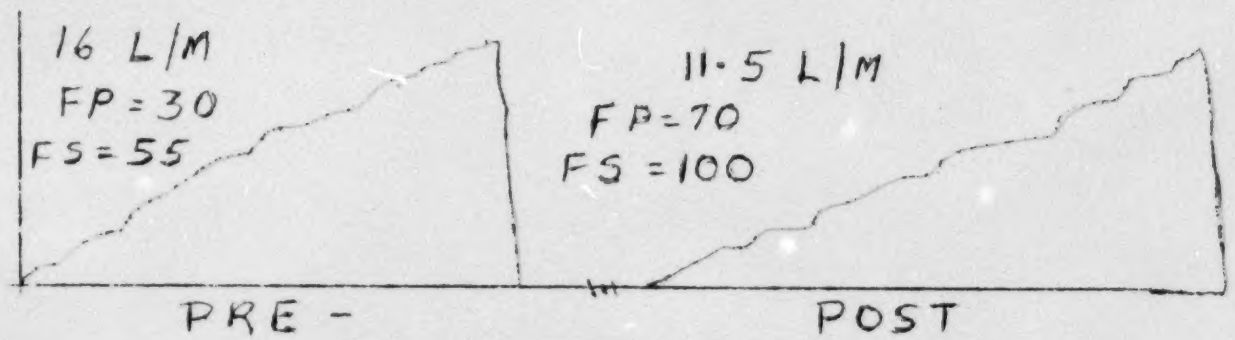

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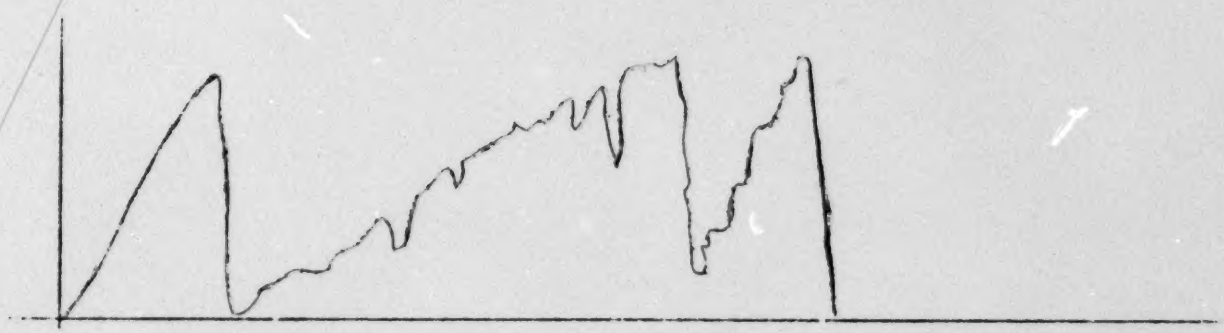


POST-

SUMMARY OF CHANGES IN SPEED AND LEARNING PERFORMANCE
(Pre- and Post- Course)

PRE- COURSE					POST- COURSE			
Lines/Min.	Main Points	Factual items	Combined Score	SUBJECT	Lines/Min.	Main Points	Factual items	Combined Score
9.8	36%	30%	33%	1	3.4	84%	90	87
9.6	40	60	50	2	4.0	92	90	91
12.8	36	80	58	3	5.1	72	80	76
7.0	20	90	55	4	2.5	88	90	89
9.7	24	80	52	5	4.5	52	90	71
6.5	28	40	34	6	3.4	96	100	98
9.6	28	90	59	7	4.3	76	90	83
5.7	20	80	50	8	3.4	92	90	91
6.3	20	50	35	9	4.3	84	90	87

ALL CHANGES ARE HIGHLY SIGNIFICANT

LOUGHBOROUGH

CHANGES IN ACADEMIC PERFORMANCE

EDUCATION COURSE

Experimental Group			Control Group		
Before	After	Change	Before	After	Change
D	B-	+5	C-	B-	+3
C	C	0	C-	B-	+3
C	C	0	C-	C+	+2
C	C+	+1	C-	C+	+2
C	B	+3	C-	C	+1
C	B	+3	C	C-	-1
C	B	+3	C	D+	-2
C	A-	+5	C	D-	-4
C+	A-	+4	C+	B	+2
			C+	B-	+1
			C+	C+	0
			C+	C+	0
			C+	C+	0
			C+	C	-1
			B-	B+	+2
			B-	B	+1
			B-	B-	0
			B-	C	-2
			B	B+	+1
			B	B-	-1
			B	C+	-2
			B	C	-3

Significant Improvement .01

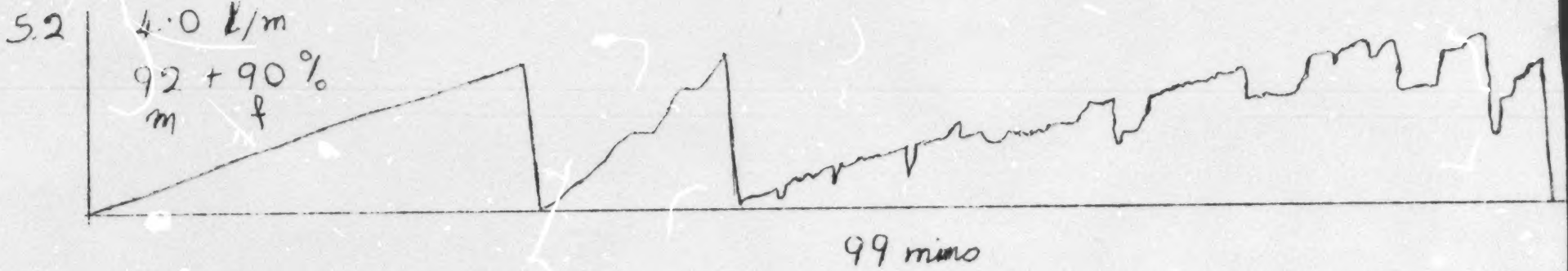
P.E. (THEORY) COURSE

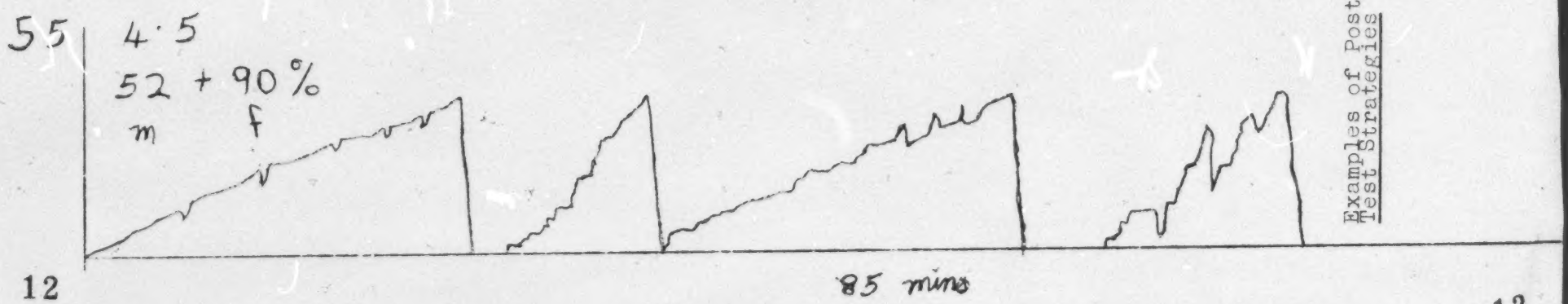
Experimental Group

Before	After	Change
D+	C	+2
D+	B+	+6
C-	C+	+2
C-	B	+4
C	A-	+5
C+	A-	+4
C+	A-	+4
B	B	0
B	A-	+2

Significant Improvement .01

LOUGHBOROUGH


5.2
4·0 l/m
92 + 90 %
m f
99 mins


5.5
4·5
52 + 90 %
m f
85 mins

3. GIPSY HILL STUDY

The aim of this study was to encourage students to research and experiment with their own reading, using the same techniques that were contained in the Loughborough training modules. It was expected that the results of such personal investigations would be variable and that the changes achieved by a student would relate to his overall purposes.

Procedure

A four-day intensive course offered students the opportunity to learn to interpret their records on the Reading Recorder and to describe the meaning structure of a text using the Flow Diagram technique. In addition, they were taught how to investigate, clarify and differentiate their purposes by using the Kelly Repertory Grid. 'Before' and 'after' measures as similar as possible to those used in the Loughborough study were obtained to judge the impact of this experience on the students' methods of reading and on their longer-term academic performance. A control group of matched students was used to highlight the changes achieved by the experimental group.

The Results of this study are offered in a form as near comparable to the Loughborough results as possible. However, since the students were offered much greater freedom in choosing how to use and exercise the recording and flow diagram techniques, the data is not as coherent as that obtained in the more controlled investigation.

a) Reading Strategies before the Course.
Both the strategies of reading and performance as measured by memory of main themes and factual items was highly variable. These results were not distinguishable from those obtained at the beginning of the Loughborough study. (see previous diagrams).

We are grateful to the Principal, Staff and Students of Gipsy Hill College of Education and in particular to Miss D. Montgomery for the support and cooperation they have offered us throughout this study.

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SUMMARY OF CHANGES IN SPEED AND LEARNING PERFORMANCE
(Pre- and Post- Course)

PRE- COURSE					POST- COURSE			
Lines/Min.	Main Points	Factual Items	Combined Score	SUBJECT	Lines/Min.	Main Points	Factual Items	Combined Score
4.2	33%	67%	50%	1	8.3	44	100	72%
5.6	44	42	43	2	9.1	67	83	75
2.5	22	17	19	3	7.7	55	67	61
10.0	44	50	47	4	10.6	67	83	75
4.0	55	60	61	5	3.3	33	68	51
5.6	22	83	52	6	4.0	44	83	63
11.5	33	50	41	7	7.1	44	83	63
7.1	67	83	75	8	4.2	78	83	81
7.1	33	68	51	9	7.7	22	83	52

SIGNIFICANT CHANGES IN PERFORMANCE SCORES

15

16

GIPSY HILL

CHANGES IN ACADEMIC PERFORMANCE

EDUCATION COURSE

Experimental Group

Before	After	Change
C	B-	+2
C	B-	+2
C	B-	+2
C+	B-	+1
C+	B	+2
B-	B	+1
B-	B+	+2
B-	B+	+2
B	B+	+1

Significant Improvement .01

GIPSY HILL

CHANGE IN STUDENT RESPONSES TO A QUESTIONNAIRE

No. of Q's	Sub-Scale +	L.	G.	Sub-Scale -
7	I find words and sentences easy to read	N.S ← 0	N.S ←	I often stumble over unusual words and long sentences
9	I read for main ideas	N.S ←	N.S 0	I read to remember facts
5	I question what I read	.01 ←	N.S 0.1 ←	I accept what I read
6	I read fast	N.S 0	N.S ←	I read too slowly
9	I am flexible in using various methods of reading for learning	N.S 0.1 ←	.001 ←	I always read in the same way
6	I plan my reading	.001 ←	.01 ←	I seldom plan my reading
5	I search for organisation in a text	.01 ←	.01 ←	I take a text as it comes
6	I like reading for learning	.001 ←	N.S 0.1 ←	I dislike reading for learning
6	I take few notes	.01 ←	N.S →	I take many notes

KEY:-

L = Loughborough College of Education

G = Gipsy Hill College of Education

N.S = Not Significan

READING IMPROVEMENT AND ACADEMIC PERFORMANCE

Lines/Min.	Combined Score	Education	Physical Education	SUBJECT	Lines/Min.	Combined Score	Education	Physical Educ.
9.8	33%	C	D+	1	3.4	87	B	C
9.6	50	C+	C+	2	4.0	91	A-	A-
12.8	58	C	C	3	5.1	76	C	A-
7.0	55	C	B	4	2.5	89	B	A-
9.7	52	C	C-	5	4.5	71	C	C+
6.5	34	C	C+	6	3.4	98	A-	A-
9.6	59	C	D+	7	4.3	83	C+	B+
5.7	50	C	B	8	3.4	91	B	B
6.3	35	D	C-	9	4.3	87	B-	B

COMBINED SCORE AND EDUCATION

CORRELATION COEFFICIENT SPEARMAN rho = 0.84

GIPSY HILL

Conclusions and Discussion

The Loughborough Study

The students in the Loughborough study were trained in groups of 2 or 4 and received considerable personal attention. They were encouraged to keep a personal record-book showing in detail how their performance, speed and strategies were changing with the exercises which they carried out. The result shows that each of the Modules produced a change in strategy and specific performance. The total study at Loughborough will include the use of ten Modules, but the results from the first five show that the learning outcomes from reading has already improved considerably, particularly in the remembering of main themes where the improvement may be100-300%. Because the study is not yet complete, the students have not exercised in the more complex multiple purposes strategies and therefore the post-test results show a considerable increase in reading time, i.e. a decrease in reading rate lines per minute. It is expected that as the students progress to Modules 6-10, their reading rates will again improve and they will become more versatile in their use of reading as a learning skill.

The following table shows that the emphasis to date has been on the simpler tasks of recall and recognition of factual items.

PERCENTAGE OF TOTAL EXERCISES PER MODULE

	MODULE				TOTAL
	1	2	3	4/5	
Loughborough	40%	30%	8%	22%	100
Gipsy Hill	16%	19%	19%	46%	100

When the improvement in reading performance is related to academic performance we find that all the students taking the reading course have improved on two of their main College courses - Education and P.E. Theory. This improvement is quite startling; two of the students achieved the only A's in education and four out of nine achieved A's for physical education theory.

There is a high correlation between improvement on the reading course and improvement in general College performance.

Students differ in the ways in which they answered a questionnaire before and after the reading course. The Loughborough students indicated that they :-

1) questioned what they read rather than accepting what is in the book;
2) planned their reading;
3) looked for organisation in the text;
4) liked reading for learning much more after they had taken part in the course;
5) make less notes.

The Gipsy Hill Study

The Gipsy Hill course was much more permissively organised in that students were allowed to do what exercises they wished and measured their own performance. This seems to have produced rather less improvement along the dimensions which were used in the pre- and post-testing.

In selecting their exercises, they tended to try the more difficult Modules. In discussion at the end of the four days they said that they would have liked to do more exercises on the more specific tasks in the early Modules.

Inspite of the difficulty of measuring change in experimenter terms, when subjects were pursuing their own purposes significant changes took place in both main point and factual reading performance, and all the subjects improved their grades in their education course.

Although the grades for the whole year have not yet been made available to us, there is reason to believe that the marks at Gipsy Hill are more clustered about the centre (C) than the Loughborough grades.

Staff comment about the changes in students was very favourable, particularly in terms of their preparation and participation in seminars.

It may be important to note that on the questionnaire the Gipsy Hill students felt that they had become more flexible in their use of reading, although the Loughborough students did not produce a significant change on this dimension.